

CONTROLLABLE DAMPING FORCE SHOCK ABSORBER

ABSTRACT OF THE DISCLOSURE

In a controllable damping force shock absorber, a piston member connected to a piston rod is fittingly disposed in a cylinder in which a magnetic fluid is sealably contained. A disc valve having an extension-stroke pressure-receiving portion and a compression-stroke pressure-receiving portion is provided in the piston member, and a pilot chamber is formed on a rear side of the disc valve. A coil is provided adjacent to passages communicated with the pilot chamber. By energizing the coil for excitation, a magnetic field that acts on the magnetic fluid flowing through the passages is generated, thus changing the viscosity of the magnetic fluid to thereby control a damping force. A valve-opening pressure of the disc valve is controlled according to the pressure in the pilot chamber, in such a way that the magnetic fluid exposed to the magnetic field can be flowed at a low flow rate, thus achieving low power consumption. The disc valve and the pilot chamber are commonly used for an extension stroke and a compression stroke, to thereby achieve a reduction in size of the shock absorber.